

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**Claims 1-39 (cancelled).**

40. (new) A composition comprising a non-covalent association complex of:
- (a) a positively charged backbone; and
  - (b) at least two non-identical members selected from the group consisting of:
    - (i) a negatively charged backbone having a plurality of attached imaging moieties.
    - (ii) a negatively charged backbone having a plurality of attached targeting agents;
    - (iii) at least one member selected from the group consisting of RNA, DNA, ribozymes, modified oligonucleotides and cDNA encoding a selected transgene;
    - (iv) DNA encoding at least one persistence factor; and
    - (v) a negatively charged backbone having a plurality of attached biological agents, wherein each of said biological agents is a therapeutic agent;
- wherein said non-covalent association complex carries a net positive charge and at least one of said two members from (b) is selected from (i), (iii) or (v).
41. (new) The composition according to claim 40, wherein said therapeutic agent is selected from the group consisting of VEGF, botulinum toxin, a blocker of VEGF, and insulin.

42. (new) The composition according to claim 40, wherein said therapeutic agent is an analgesic.
43. (new) The composition according to claim 42, wherein said analgesic is selected from the group consisting of lidocaine, novacaine, bupivacaine, procaine, tetracaine, benzocaine, cocaine, mepivacaine, etidocaine, proparacaine ropivacaine, and prilocaine.
43. (new) The composition according to claim 40, wherein said therapeutic agent is an anti-asthmatic agent.
44. (new) The composition according to claim 43, wherein said anti-asthmatic agent is selected from the group consisting of azelastine, ketotifen, traxanox, corticosteroids, cromolyn, nedocromil, albuterol, bitolterol mesylate, pirbuterol, salmeterol, terbutyline, and theophylline.
45. (new) The composition according to claim 40, wherein said therapeutic agent is an antibiotic.
46. (new) The composition according to claim 45, wherein said antibiotic is selected from the group consisting of neomycin, streptomycin, chloramphenicol, norfloxacin, ciprofloxacin, trimethoprim, sulfamethyloxazole,  $\beta$ -lactam antibiotics, and tetracycline.

47. (new) The composition according to claim 40, wherein said therapeutic agent is an antidepressant agent.
48. (new) The composition according to claim 47, wherein said antidepressant agent is selected from the group consisting of nefopam, oxypertine, imipramine, and trazadone.
49. (new) The composition according to claim 40, wherein said therapeutic agent is an anti-diabetic agent.
50. (new) The composition according to claim 49, wherein said anti-diabetic agent is selected from the group consisting of biguanidines and sulfonylureas.
51. (new) The composition according to claim 40, wherein said therapeutic agent is an antiemetic or antipsychotic.
52. (new) The composition according to claim 51, wherein said antiemetic or antipsychotic is selected from the group consisting of chlorpromazine, fluphenazine, perphenazine, prochlorperazine, promethazine, thiethylperazine, triflupromazine, haloperidol, scopolamine, diphenidol, and trimethobenzamide.
53. (new) The composition according to claim 40, wherein said therapeutic agent is a neuromuscular agent.

54. (new) The composition according to claim 53, wherein said neuromuscular agent is selected from the group consisting of atracurium mivacurium, rocuronium, succinylcholine, doxacurium, and tubocurarine.
55. (new) The composition according to claim 40, wherein said therapeutic agent is an antifungal agent.
56. (new) The composition according to claim 55, wherein said antifungal agent is selected from the group consisting of amphotericin B, nystatin, candicidin, itraconazole, ketoconazole, miconazole, clotrimazole, fluconazole, ciclopirox, econazole, naftifine, terbinafine, and griseofulvin.
57. (new) The composition according to claim 40, wherein said therapeutic agent is an antihypertensive agent.
58. (new) The composition according to claim 57, wherein said antihypertensive agent is selected from the group consisting of propanolol, propafenone, oxyprenolol, nifedipine, and reserpine.
59. (new) The composition according to claim 40, wherein said therapeutic agent is an anti-impotence agent.

60. (new) The composition according to claim 59, wherein said anti-impotence agent is a nitric oxide donor.
61. (new) The composition according to claim 40, wherein said therapeutic agent is a steroidal anti-inflammatory agent.
62. (new) The composition according to claim 61, wherein said steroidal anti-inflammatory agent is selected from the group consisting of cortisone, hydrocortisone, dexamethasone, prednisolone, prednisone, and fluazacort.
63. (new) The composition according to claim 40, wherein said therapeutic agent is a non-steroidal anti-inflammatory agent.
64. (new) The composition according to claim 63, wherein said non-steroidal anti-inflammatory agent is selected from the group consisting of indomethacin, ibuprofen, ramifenizone, and piroxicam.
65. (new) The composition according to claim 40, wherein said therapeutic agent is an antineoplastic agent.
66. (new) The composition according to claim 65, wherein said antineoplastic agent is selected from the group consisting of adriamycin, cyclophosphamide, actinomycin, bleomycin, daunorubicin, doxorubicin, epirubicin, mitomycin, rapamycin, methotrexate,

fluorouracil, carboplatin, carmustine (BCNU), cisplatin, etoposide, interferons, phenesterine, taxol and analogs and derivatives thereof, camptothecin and derivatives thereof, vinblastine, and vincristine.

67. (new) The composition according to claim 40, wherein said therapeutic agent is an anti-viral agent.
68. (new) The composition according to claim 67, wherein said anti-viral agent is selected from the group consisting of amantadine, methisazone, idoxuridine, cytarabine, acyclovir, famciclovir, ganciclovir, foscarnet, sorivudine, trifluridine, valacyclovir, cidofovir, didanosine, stavudine, zalcitabine, zidovudine, ribavirin, and rimantadine.
69. (new) The composition according to claim 40, wherein said therapeutic agent is an anxiolytic agent.
70. (new) The composition according to claim 69, wherein said anxiolytic agent is selected from the group consisting of dantrolene and diazepam.
71. (new) The composition according to claim 40, wherein said therapeutic agent is a COX-2 inhibitor.
72. (new) The composition according to claim 40, wherein said therapeutic agent is a contraception agent.

73. (new) The composition according to claim 72, wherein said contraception agent is progestogen.
74. (new) The composition according to claim 40, wherein said therapeutic agent is an anti-thrombotic agent.
75. (new) The composition according to claim 74, wherein said anti-thrombotic agent is selected from the group consisting of a GPIIb/IIIa inhibitor, a tissue plasminogen activator, streptokinase, urokinase, and heparin.
76. (new) The composition according to claim 40, wherein said therapeutic agent is a prothrombotic agent.
77. (new) The composition according to claim 76, wherein said prothrombotic agent is selected from the group consisting of thrombin, factor V, factor VII, and factor VIII.
78. (new) The composition according to claim 40, wherein said therapeutic agent is a hormone.
79. (new) The composition according to claim 78, wherein said hormone is selected from the group consisting of prolactin, growth hormone, and epidermal growth factor.

80. (new) The composition according to claim 40, wherein said therapeutic agent is an immunosuppressive agent.
81. (new) The composition according to claim 80, wherein said immunosuppressive agent is selected from the group consisting of cyclosporine, azathioprine, mizorobine, FK506, and prednisone.
82. (new) The composition according to claim 40, wherein said therapeutic agent is an angiogenic agent.
83. (new) The composition according to according to claim 40, wherein said therapeutic agent is a vitamin.
84. (new) The composition according to claim 83, wherein said vitamin is selected from the group consisting of vitamin A, vitamin D, vitamin E, and vitamin K.
85. (new) A composition comprising a non-covalent association complex of:
- a) a positively charged backbone; and
  - b) at least two non-identical members selected from the group consisting of:
    - i) a negatively charged backbone having a plurality of attached imaging moieties.
    - ii) a negatively charged backbone having a plurality of attached targeting agents;



- iii) at least one member selected from the group consisting of RNA, DNA, ribozymes, modified oligonucleotides and cDNA encoding a selected transgene;
- iv) DNA encoding at least one persistence factor; and
- v) a negatively charged backbone having a plurality of attached biological agents, wherein each of said biological agents is a cosmeceutical agent;

wherein said non-covalent association complex carries a net positive charge and at least one of said two members from group b) is selected from groups i), iii) or v).

- 86. (new) The composition according to claim 40, wherein said positively charged backbone comprises positively charged branching groups attached thereto, said positively charged branching groups having the formula  $(\text{gly})_p\text{-RGRDDRRQRRR-(gly)}_q$  (SEQ ID NO:19), wherein p and q are each independently an integer from 0 to 20, and wherein each positively charged branching group is attached to said positively charged backbone via the C-terminus or the N-terminus of said positively charged branching group.
- 87. (new) The composition in accordance with claim 86, wherein the subscripts p and q are each independently integers of from 0 to 8.
- 88. (new) The composition in accordance with claim 87, wherein the subscripts p and q are each independently integers of from 2 to 5.

89. (new) The composition according to claim 86, wherein therapeutic agent is botulinum toxin.
90. (new) A kit for formulating a pharmaceutical composition, said kit comprising
- (a) a positively charged backbone;
  - (b) at least two non-identical members selected from the group consisting of:
    - (i) a negatively charged backbone having a plurality of attached imaging moieties.
    - (ii) a negatively charged backbone having a plurality of attached targeting agents;
    - (iii) at least one member selected from the group consisting of RNA, DNA, ribozymes, modified oligonucleotides and cDNA encoding a selected transgene;
    - (iv) DNA encoding at least one persistence factor; and
    - (v) a negatively charged backbone having a plurality of attached biological agents, wherein each of said biological agents is a therapeutic agent;
- at least one of said two members from (b) is selected from (i), (iii) or (v);
- and
- (c) instructions for preparation of said pharmaceutical composition.
91. (new) The kit according to claim 90, wherein said positively charged backbone comprises positively charged branching groups attached thereto, said positively charged branching groups having the formula  $(\text{gly})_p\text{-RGRDDRRQRRR-(gly)}_q$  (SEQ ID NO:19), wherein p

and q are each independently an integer from 0 to 20, and wherein each positively charged branching group is attached to said positively charged backbone via the C-terminus or the N-terminus of said positively charged branching group.

92. (new) The kit according to claim 90, wherein said therapeutic agent is selected from the group consisting of VEGF, botulinum toxin, a blocker of VEGF, and insulin.
93. (new) The kit according to claim 92, wherein said therapeutic agent is botulinum toxin.
94. (new) The kit according to claim 90, wherein said therapeutic agent is an analgesic.
95. (new) The kit according to claim 94, wherein said analgesic is selected from the group consisting of lidocaine, novacaine, bupivacaine, procaine, tetracaine, benzocaine, cocaine, mepivacaine, etidocaine, proparacaine ropivacaine, and prilocaine.
96. (new) The kit according to claim 90, wherein said therapeutic agent is an anti-asthmatic agent.
97. (new) The kit according to claim 46, wherein said anti-asthmatic agent is selected from the group consisting of azelastine, ketotifen, traxanox, corticosteroids, cromolyn, nedocromil, albuterol, bitolterol mesylate, pirbuterol, salmeterol, terbutyline, and theophylline.

98. (new) The kit according to claim 90, wherein said therapeutic agent is an antibiotic.
99. (new) The kit according to claim 98, wherein said antibiotic is selected from the group consisting of neomycin, streptomycin, chloramphenicol, norfloxacin, ciprofloxacin, trimethoprim, sulfamethyloxazole,  $\beta$ -lactam antibiotics, and tetracycline.
100. (new) The kit according to claim 90, wherein said therapeutic agent is an antidepressant agent.
101. (new) The kit according to claim 100, wherein said antidepressant agent is selected from the group consisting of nefopam, oxypertine, imipramine, and trazadone.
102. (new) The kit according to claim 90, wherein said therapeutic agent is an anti-diabetic agent.
103. (new) The kit according to claim 100, wherein said anti-diabetic agent is selected from the group consisting of biguanidines and sulfonylureas.
104. (new) The kit according to claim 90, wherein said therapeutic agent is an antiemetic or antipsychotic.
105. (new) The kit according to claim 104, wherein said antiemetic or antipsychotic is selected from the group consisting of chlorpromazine, fluphenazine, perphenazine,

prochlorperazine, promethazine, thiethylperazine, triflupromazine, haloperidol, scopolamine, diphenidol, and trimethobenzamide.

106. (new) The kit according to claim 90, wherein said therapeutic agent is a neuromuscular agent.
107. (new) The kit according to claim 106, wherein said neuromuscular agent is selected from the group consisting of atracurium mivacurium, rocuronium, succinylcholine, doxacurium, and tubocurarine.
108. (new) The kit according to claim 90, wherein said therapeutic agent is an antifungal agent.
109. (new) The kit according to claim 108, wherein said antifungal agent is selected from the group consisting of amphotericin B, nystatin, candicidin, itraconazole, ketoconazole, miconazole, clotrimazole, fluconazole, ciclopirox, econazole, naftifine, terbinafine, and griseofulvin.
110. (new) The kit according to claim 90, wherein said therapeutic agent is an antihypertensive agent.

111. (new) The kit according to claim 110, wherein said antihypertensive agent is selected from the group consisting of propranolol, propafenone, oxyprenolol, nifedipine, and reserpine.
112. (new) The kit according to claim 90, wherein said therapeutic agent is an anti-impotence agent.
113. (new) The kit according to claim 112, wherein said anti-impotence agent is a nitric oxide donor.
114. (new) The kit according to claim 90, wherein said therapeutic agent is a steroidal anti-inflammatory agent.
115. (new) The kit according to claim 114, wherein said steroidal anti-inflammatory agent is selected from the group consisting of cortisone, hydrocortisone, dexamethasone, prednisolone, prednisone, and fluazacort.
116. (new) The kit according to claim 90, wherein said therapeutic agent is a non-steroidal anti-inflammatory agent.
117. (new) The kit according to claim 116, wherein said non-steroidal anti-inflammatory agent is selected from the group consisting of indomethacin, ibuprofen, ramifenizone, and piroxicam.

118. (new) The kit according to claim 90, wherein said therapeutic agent is an antineoplastic agent.
119. (new) The kit according to claim 118, wherein said antineoplastic agent is selected from the group consisting of adriamycin, cyclophosphamide, actinomycin, bleomycin, duanorubicin, doxorubicin, epirubicin, mitomycin, rapamycin, methotrexate, fluorouracil, carboplatin, carmustine (BCNU), cisplatin, etoposide, interferons, phenesterine, taxol and analogs and derivatives thereof, camptothecin and derivatives thereof, vinblastine, and vincristine.
120. (new) The kit according to claim 90, wherein said therapeutic agent is an anti-viral agent.
121. (new) The kit according to claim 120, wherein said anti-viral agent is selected from the group consisting of amantadine, methisazone, idoxuridine, cytarabine, acyclovir, famciclovir, ganciclovir, foscarnet, sorivudine, trifluridine, valacyclovir, cidofovir, didanosine, stavudine, zalcitabine, zidovudine, ribavirin, and rimantadine.
122. (new) The kit according to claim 90, wherein said therapeutic agent is an anxiolytic agent.
123. (new) The kit according to claim 122, wherein said anxiolytic agent is selected from the group consisting of dantrolene and diazepam.

124. (new) The kit according to claim 90, wherein said therapeutic agent is a COX-2 inhibitor.
125. (new) The kit according to claim 90, wherein said therapeutic agent is a contraception agent.
126. (new) The kit according to claim 125, wherein said contraception agent is progestogen.
127. (new) The kit according to claim 90, wherein said therapeutic agent is an anti-thrombotic agent.
128. (new) The kit according to claim 127, wherein said anti-thrombotic agent is selected from the group consisting of a GPIIb/IIIa inhibitor, a tissue plasminogen activator, streptokinase, urokinase, and heparin.
129. (new) The kit according to claim 90, wherein said therapeutic agent is a prothrombotic agent.
130. (new) The kit according to claim 129, wherein said prothrombotic agent is selected from the group consisting of thrombin, factor V, factor VII, and factor VIII.
131. (new) The kit according to claim 90, wherein said therapeutic agent is a hormone.



132. (new) The kit according to claim 131, wherein said hormone is selected from the group consisting of prolactin, growth hormone, and epidermal growth factor.
133. (new) The kit according to claim 90, wherein said therapeutic agent is an immunosuppressive agent.
134. (new) The kit according to claim 133, wherein said immunosuppressive agent is selected from the group consisting of cyclosporine, azathioprine, mizorobine, FK506, and prednisone.
135. (new) The kit according to claim 90, wherein said therapeutic agent is an angiogenic agent.
136. (new) The kit according to according to claim 90, wherein said therapeutic agent is a vitamin.
137. (new) The kit according to claim 136, wherein said vitamin is selected from the group consisting of vitamin A, vitamin D, vitamin E, and vitamin K.